Patent Claims

1. A loom with a warp thread tensioning device and with a shedding device (12, 12a) which has warp threads (4) pretensioned into a first shedding position (F_1), furthermore with a lifting device (38) capable of being driven in oscillation and having drivers (40) for the warp threads (4), and also with control means (46) actuable by means of actuators (44), in order to bring the warp threads (4) selectively into engagement with the drivers (40) which move the warp threads (4) into a second shedding position (F_3), characterized in that said loom has a second lifting device (48) common to all the warp threads (4), in order to move the warp threads (4) out of the first shedding position (F_1) into a switching position (F_2) active for the first lifting device (38) and in order to move nonselected warp threads jointly into the first shedding position (F_1) as a result of the pretensioning of the warp threads (4).

2. The loom as claimed in claim 1, characterized in that the second lifting device (48) is designed as a lifting beam extending over all the warp threads (4).

3. The loom as claimed in claim 1 or 2, characterized in that the second lifting device (48) executes at least half (H_2) of the lifting travel of the warp threads in the shed.

4. The loom as claimed in one of claims 1 to 3, characterized in that the first lifting device (38) has, for each warp thread, a control drop wire (50) with a driver slot (62, 62a, 62b) and an assigned driver (40, 40a), preferably of hook-shaped design, for the associated warp thread (4), the warp thread being capable of being brought selectively into engagement with the driver (40, 40a) by means of the control drop wire (50) switchable by means of the actuator (44).

5. The loom as claimed in claim 4, characterized in that the driver slot (62, 62a, 62b) is assigned to the displacement path of the driver (40, 40a) and, in the switching region, leads, via a control slot (64) running obliquely with respect to the direction of displacement of the driver, out of the displacement path of the driver (40, 40a) into a widened guide slot (66) of the control drop wire.

6. The loom as claimed in claim 5, characterized in that the guide slot (66) has a run-on side (76) running toward the control slot (64).

7. The loom as claimed in one of claims 4 to 6, characterized in that the control drop wire (50) is designed in the form of a sleeve with two side walls (68, 70), the driver (40, 40a) being mounted displaceably between the side walls (68, 70).

8. The loom as claimed in claim 7, characterized in that at least the driver slot (62a, 62b) and the control slot (64) are formed in the two side walls (68, 70), the driver slots (62a, 62b) and the control slots (64) of the side walls (68, 70) being offset relative to one another in the direction of run of the warp thread (4) in such a way that a deflection α of the running warp thread in the control drop wire (50) is lower than 90°, preferably 10°.

9. The loom as claimed in one of claims 4 to 8, characterized in that all the drivers (40) of a row can be moved up and down by means of a common lifting beam (42).

10. The loom as claimed in one of claims 1 to 9, characterized in that the warp thread tensioning device has an individual thread tensioner (8, 8a) for each

warp thread (4) on the run-in side of the warp threads (4) to the shedding device (12, 12a).

11. The loom as claimed in claim 10, characterized in that the thread tensioner (8a) is designed as a catch thread device.

12. The loom as claimed in claim 10 or 11, characterized in that each warp thread (4) is guided via two guide elements (30, 30a) which are arranged at a distance from one another and between which is arranged the thread tensioner (8, 8a) which engages on the warp thread and exerts a pretension on the warp thread.

13. The loom as claimed in claim 12, characterized in that the pretension is generated by a tensioning weight.

14. The loom as claimed in claim 12, characterized in that the pretension is generated by a tensioning spring (32, 32a).

15. The loom as claimed in one of claims 10 to 14, characterized in that each thread tensioner (8a) has a lateral run-in eye (34a) for the warp thread (4).

16. The loom as claimed in one of claims 10 to 15, characterized in that each thread tensioner (8a) has a guide orifice (114), by means of which it is mounted on a holder (116) displaceably in the tensioning direction, the thread tensioner having, in the direction opposite to the pretensioning direction, a grip part (126) which is preferably provided with a signal part (128) projecting out of the displacement direction.

17. The loom as claimed in claim 16, characterized in

that the holder (116) has a middle contact part (118) which projects from one side and which, insulated, is embedded into lateral contact parts (120) cooperating with the sides of the guide orifice (114) of the thread tensioner, and, in the event of a faulty warp thread tension, the contact parts (118, 120) can be bridged by means of an end face (124) of the guide orifice (114) for fault warning.

18. The loom as claimed in one of claims 1 to 17, characterized in that the warp thread tensioning device has a control device (26, 26a) which is connected to the drive (28, 28a) of a cloth take-up (24, 24a), in order to control the drive (28, 28a) of the cloth take-up (24, 24a) as a function of the retaining force of a warp beam (2, 2a), in such a way that the warp threads as a whole are under a predeterminable tension force.

19. The loom as claimed in claim 18, characterized in that, to generate the retaining force, the warp beam (2a) has a specific drive (82) provided with a selflocking gear (84).

20. The loom as claimed in claim 18 or 19, characterized in that the warp thread tensioning device has a back bearer (6a) for the warp threads (4) which is pretensioned by means of a tensioning spring device (86), the tensioning spring device (86) being connected to the control device (26a) in such a way that the drives (82, 28a) of the warp beam (2a) and of the cloth take-up (24a) can be controlled in such a way that the predeterminable tension force can be maintained at the back bearer (6a).

21. The loom as claimed in claim 20, characterized in that the tensioning spring device (86) has a leaf spring (92) with a flexion converter (94) which is

connected to the control device (26a).

22. The loom as claimed in claim 20 or 21, characterized in that the tensioning spring device (86) is connected to the back bearer (6a) via a safety device (96) having an emergency switch (112) which responds when the force of the warp threads (4) which occurs at the back bearer (6a) is higher than the set tension force by a determinable safety amount.